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MOBILITY AND FLEXIBILITY—the twin goals of any striking force geared to the conditions of modern war—are combined in the Army's helicopter family. The Army H-21C Tandem Helicopter on the front cover is transporting a 105-mm. howitzer by means of an external cargo sling. Other diversified uses of this versatile aircraft are described in "A Tactical Role for Helicopters" appearing in this issue.

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Number 9

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AFFE/8 U. S. Army protects and administer

Our Ground Defense

Lieutenant Jean I. Castles

HEADQUARTERED in Camp Zama, Japan, former West Point of the Imperial Japanese Army, Army Forces Far East and Eighth U.S. Army (AFFE/8 U. S. Army) is the nerve center of United States ground forces in the Far East.

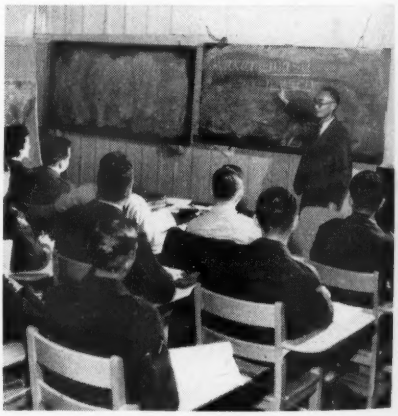
Like Caesar's Gaul, AFFE/8 U.S. Army is divided into three parts. In scope it ranges from a part of the peninsula that is Korea, throughout Japan, to the island bastion of Okinawa. Climatically, it runs the gamut from the frozen hills of a Korean winter to the semi-tropical island where the trade winds of song and fiction envelop Okinawa.

In addition to its combat training and supply functions, it is also the benevolent landlord to the hundreds of dependents who have come to Japan to join their military sponsors. It is department store, grocery store, gas station, garage, public school system, transportation network, church, stateside-type radio web and motion picture chain. It is obstetrical wards and graves registration.

FIRST LIEUTENANT JEAN I. CASTLES, Women's Army Corps, is Press Officer, Public Information Section, Headquarters, Army Forces Far East/Eighth U. S. Army.

Training

Education



DEPOSITED BY THE
NITED STATES OF AMERICA

Line In The Far East

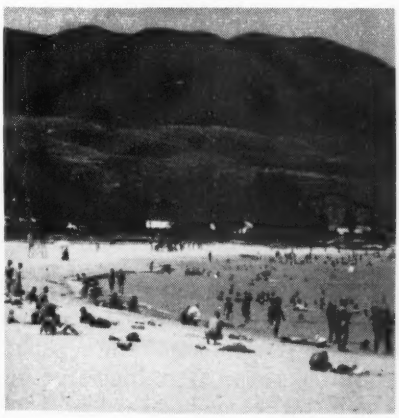
And it is also the personification of the American heart, found in the Japanese orphanages, old people's homes, and charitable institutions supported by divisions, batteries, and small detachments. The hub is in a Pentagon-like structure at Zama, and the soul is in every individual serving in or with the Army in the Far East.

In Japan proper are five of AFFE/8th Army's eight major subordinate commands. In the north is IX Corps, located in Sendai. IX Corps has within its purview Northern Command, which is in north central Honshu, and Central Command, which includes the metropolitan area of Tokyo-Yokohama. IX Corps' mission is both administrative and tactical.

Southwestern Command, based at Otsu on southern Honshu, is an administrative headquarters located in a Japan that was more than 700 years old when Columbus discovered America. Also under AFFE/8 U.S. Army are two major tactical commands: the Provisional Corps Japan and the 40th AAA Brigade. The 187th Regimental Combat Team, a tactical unit in the south, [lately replaced by the 508th RCT] is administered by Southwestern Command. Camp Zama, home of AFFE/8 Army, is also on the major subordinate command level.

THE mission and functions of Army Forces Far East are spelled

Recreation



Travel

Heian Temple is typical of the architectural and botanical beauty to be found in Japan.

out in Army directives:

"To direct and coordinate the activities of all United States Army Forces in the Far East Command in accordance with the command plan, and exercise operational control of such other forces as are assigned; to provide logistical support to the Army, Air Force, United Nations Forces engaged in Korean operations and Republic of Korea Forces; to provide communications zone support for a field army, to include services, supply, evacuation, hospitalization and transportation; to procure from sources outside the United States, its territories and possessions, supplies, services, and equipment as authorized or directed by the Department of the Army; to provide for the issuance of directives, prescribing objectives, levels, priorities, storage and disposition of excess supplies and equipment; and to provide ground defense within the Far East Command as directed by the Commander-in-Chief, Far East."

These words cover an even greater number of responsibilities and functions.

The U.S. Army in Japan, Korea, and Okinawa performs an enormous logistic mission and at the same time maintains a fine training edge, so as to be capable of manning tanks, cannon and dugout if again needed as in June 1950 when the Korean crisis arose.

KOREA

TROOPS under Eighth U. S. Army (FWD) maintain a constant state of readiness up to the demilitarized zone; as a secondary mission, those in rear areas are working to rebuild churches, schools, and civic buildings destroyed when South Korea was overrun by enemy armies. Republic of Korea troops are being trained and military and civil assistance given. Throughout all of this, combat readiness is the watchword.

Outside of hard work and ever-present training, Korea has little to offer United States personnel. The hot, humid summers and the sub-zero cold winters make the peninsula climatically one of the least desirable of the Army's worldwide areas. Paved roads are practically nonexistent; cities have little to offer in the way of entertainment and recreation.

On the plus side of Korean service, the food is becoming more varied—fresh butter, whole white milk and chocolate milk were added recently. And at American installations remaining in the battle-scarred country, quonset-hut theaters, snack bars, and service clubs are rising.

With the armistice in Korea, a more extensive troop education program was begun. Today soldiers who lack a grade school or high school education can enroll at Army education centers, often housed in quonsets and tents. Under the University of California's Far East program, servicemen can earn college credits toward a degree, and the United States Armed Forces Institute offers correspondence courses on all levels.

During 1954, a total of 5,136 Eighth Army soldiers achieved equivalence of a high school education, 4,471 achieved an eighth grade education, and 17,932 completed the fourth grade.

An extensive, highly competitive sports program has been developed. Hobbies, such as building model planes, ships, and cars, rate high with soldiers in Korea.

R&R—rest and recuperation—is eagerly anticipated. This consists of seven days in Japan on an average of twice during a 16-month tour of duty in Korea. Quartermaster, Transportation, Finance and Special Services link up to insure that the least possible time is taken up by processing. Class A's or civvies are the uniform for R&R. Japan means bright lights, new experiences in international eating, shows, shopping, tours of cosmopolitan Tokyo, a stay at Nikko, the mountain resort, or a visit to the old Japan represented by Kyoto's shrines and Buddhas.

THE history of our soldiers in Korea goes beyond Pork Chop Hill, Jane Russell Hill, amphibious landings at Inchon and the recovery of Seoul. It involved Operation Little Switch, in which sick and wounded prisoners of war were exchanged, followed by Big Switch for all others who wished to be returned to their original sides.

Operation Reclaim caught the eye of the free world in January 1954, when many thousands of Chinese and North Korean soldiers were given their freedom when they refused to return to their now Communist homelands.

The Korean Communications Zone's most recent operation was Operation Glory, when 14,000 Communist war dead and 4,000 United Nations war dead were exchanged in September and October 1954. This exchange of deceased personnel buried in the territory of two opposing forces marked a history-making "first" in human relations during an armed truce.

An important phase in the Army's aid to the Republic of Korea has been the highly successful Armed Forces Assistance to Korea program, in which some $20 million

Typical of the dependent housing areas to be found on Okinawa is this development at Sukiran.

worth of American materials have been utilized for the building of schools, hospitals, civic buildings, churches, and other structures razed by war. By 20 February 1955, some 1,469 construction projects had been completed and 540 more were under way. Voluntary donations in the form of winter clothing, fuel and food total more than $2 million.

Including both United States and Korean contributions the AFAK program to date is calculated at more than $31,000,000 in monetary value. But dollar value cannot be placed on good will and the spreading of the gospel of freedom and enterprise in this stricken country.

OKINAWA

OKINAWA, the last battleground of World War II, is an integral part of the AFFE/Eighth U.S. Army command picture, and one of the most powerful links in America's western Pacific chain of defense. Beginning at the end of World War II as a small outpost on a devastated island, the Ryukyus Command now boasts permanent military installations, wide modern highways, and up-to-date housing for Army families. It is truly "The Keystone of the Pacific." (See January 1954 DIGEST).

Because of the island's strategic location—midway between Japan and Formosa—Army personnel on Okinawa undergo continual training. Typical maneuvers include attack and defense of beaches, tank tactics, and intensive antiaircraft practice. The 75th Regimental Combat Team is the largest infantry unit of the Ryukyus Command and the 97th AAA Group heads the Command's antiaircraft artillery units.

Like the rest of the Far East, the island of Okinawa is an amateur photographer's paradise, with its

varied landscapes, sea vistas, and ancient shrines. Skin-diving around the off-shore reefs is fast becoming a popular sport. On weekends, Special Services schedules tours to the scenic, historical, or cultural areas of the island, which has much to offer along its 67-mile length, and width that varies from three to ten miles.

Education centers in the Command serve on-duty as well as off-duty purposes. Educational levels emphasized as essential for non-commissioned officer leadership can be attained in duty-hour study, and MOS training also is provided. After-duty-hour courses in college level as well as technical-vocational subjects are offered by USAFI, University of California and University of Oklahoma courses.

Group study enrollment totalled 1,643 during the last three months of 1954. The Education Centers administered tests to 1,478 persons during the period, enabling many to qualify for academic credit.

Unlike Korea, Okinawa has natural as well as man-made recreational facilities. Although no larger than a pinpoint in the AFFE/8 U.S. Army complex, Ryukyus Command boasts an 18-hole and a 9-hole golf course, and several miniature golf courses. Beaches for military personnel are on both coasts of Okinawa; horseback riding, tennis, offshore fishing are a few of the outdoor sport facilities at hand. There are seven theaters in troop areas, two in rest centers. Five craft shops offer a wide range of hobbies, from photography and woodworking through leathercraft and model plane building. Libraries and picnic areas are included in the roster of recreational opportunities.

There is a civil affairs side to the military picture in Okinawa as in Korea. The Commander-in-Chief, Far East and United Nations Commands, is also the Governor of the Ryukyus Command, and the Commanding General of the Ryukyus Command is the Deputy Governor. Land rehabilitation, roads, education—all are a part of the civil mission of AFFE/8 U. S. Army's representatives in Okinawa.

The modern Sukiran Library, largest of five Special Service libraries on Okinawa, is popular with Army men and women.

Soldiers in Japan may acquire or improve vocational skills in off-duty classes. Here a corporal learns radio repair.

JAPANESE HOME ISLANDS

CHARGED with the defense of Northern and Central Honshu, IX Corps, with headquarters in Sendai, is involved in a year-round tactical training cycle. All elements of the Corps Headquarters, including general staff officers, support troops, and Women's Army Corps members participated in a recent command post exercise to test their ability to operate under adverse circumstances.

Winter on northern Honshu and Hokkaido means snow and cold winds. The elements there serve as training aids as well as providing recreational facilities. 1st Cavalry Division troops maneuver in the snow, wearing overwhites, carrying full field packs, utilizing skis and snowshoes for mobility. Mountain training and cold-weather survival lessons are learned, along with the action packed fun of skijoring and ski jumping. Results of the training were apparent when the Northern Honshu Sports Conference skiers won the AFFE ski tournament, with a monopoly on the cross-country, slalom, jumping, downhill racing and military cross-country (with M–1 and full field pack) events.

NORTHERN Honshu offers the contrast of skiing and hot springs. Numerous hot springs resorts in the Sendai region have adequate Japanese hotel facilities and excellent western-style as well as Japanese

restaurants. Mont Zao, Narugo, Iisaka, Sakynami, and Onikobe are all within three hours travel time by train and bus from Sendai.

Matsushima Bay, on the eastern coast of Japan a few miles north of IX Corps headquarters, is a complex bay containing hundreds of pine-covered islands ranging in size from a few square feet to several acres. To date, 249 of the picturesque islands have been charted and named. This bay, like a great deal of Japan, is a favorite of Army amateur photographers.

The area also contains several Shinto shrines and Buddhist temples, among them the Zuiganji Temple, constructed in 828 A.D.

At the head of this vast bay is the port city of Shiogama, the seaport for Sendai and the unloading point for IX Corps military supplies and sea-transported vehicles.

The Sendai region, like the rest of Japan, offers a year-round cultural program for American military and civilian personnel. The festivals, celebrations and religious observances of the Japanese people are a source of fascinating lore and photographic opportunities.

IX CORPS headquarters is the site of an AFFE/8 Army Entertainment Workshop. Two weeks of instruction in dramatic and entertainment principles, followed by the casting and production of a show, attract many of the Army men and women as an off-duty recreation. Rotating classes are given in make-up, costume design, lighting and scenery construction.

A well-balanced athletic program, offering competition on an intramural as well as command level, rounds out the recreational facilities of the IX Corps' Northern Command. Boxing, football, basketball, skiing and tennis are a few of the team sports scheduled.

The IX Corps' Central Command is metropolitan, embracing Army elements in Tokyo, Yokohama, and the Kanto Plain area. The climate is moderate, with mild winters, heavy spring rains, and a month or so of humid summer, resembling Washington, D. C. weather.

Tokyo and Yokohama, practically twin cities on Tokyo Bay, are cosmopolite in the European or American sense. It is possible to enjoy the menus of the world in their restaurants—curry in the Indian style; typically French food; ravioli in Italian places; excellent Chinese food bearing absolutely no taste resemblance to the chop suey served in the States; and, of course, *sukiyaki,* the Japanese dish that is the foreigner's delight. There are even restaurants that boast "American style cooking." In most cases the cooks are Japanese, the waiters the same, and the menu bi-lingual.

In this environment soldiers, Wacs, Department of Army civilians and dependents can learn a great deal about Japan and the Japanese people.

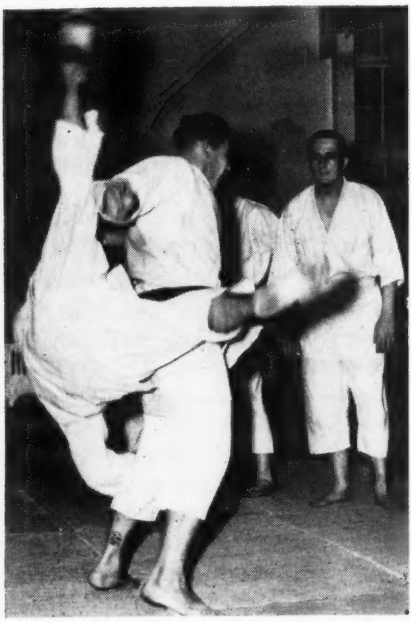
THE MAJORITY of the Army personnel and dependents bound for duty in Japan arrive at the Army's 2d Transportation Port Command "C," Yokohama. From simplified ship-board processing, they fan out to personnel centers and new duty stations. Those arriving by plane land at Tokyo's International Airport, located on the bay-side outskirts of the city.

The Central Command's area of operation is not all processing,

greeting new arrivals and welcoming R&R personnel from Korea. The headquarters has the responsibility of billeting the many dependents, soldiers and civilians in the command, managing commissaries, dependent housing areas, post exchanges, and running a transportation set-up that equals that of any Stateside city.

Buses take personnel from billets and housing areas to work at Central Command's Hardy Barracks, Far East Command Headquarters at Pershing Heights, and to train stations for the commuter's special to Zama; school buses thread through the city picking up youngsters at housing areas and in private rentals, and delivering them back home at night; sedans are dispatched from one main and several subpools on a round-the-clock basis;

A sergeant teaches Karate, *an offense-defense method of self defense.*



trucks pick up and deliver produce, household goods, baggage, petroleum and military supplies.

ALONG with this, there is again the emphasis on training, a readiness for any emergency. Clerks, cooks, technical specialists have dual duties. The majority of their duty week is spent on the job; but a minimum of four hours of that week is spent in hard, playing-for-keeps training. The typewriter is replaced by the M–1; the Class A uniform by work fatigues.

The Central Command Troop Information and Education Section serves 95 attached and assigned units, 65 of these in the regional Camp Tokyo area. In addition to the attached and assigned units, the Section serves Far East Command Headquarters, MAAG-J, Air Force, Navy, Marine, Red Cross, Department of the Army civilians, U. S. Embassy, and Security Force dependents.

There are 94 classrooms with a capacity of 3,000 in the Command. An average of 119 classes are in progress with 41 different subjects offered. Fifteen courses are MOS-related while 10 are high school and 22 college-level. The metropolitan Tokyo Education Center alone has an average weekly attendance of 1000.

SOUTHWESTERN Command, with headquarters in Otsu, is surrounded by an area rich in the traditions of old Japan. The ancient capitals of Nara and Kyoto are easily accessible by car and train.

The Command's complex network of defense forces includes the islands of Kyushu and Shikoku as well as the thickly populated Kansai

region of southeastern Honshu. Formosa, across the East China Sea, is only 675 miles from the southern tip of Kyushu. The peninsula of Korea is a mere 200 miles west of the port city of Fukuoka on Kyushu. In this atmosphere the troops of the Southwestern Command perform their administrative and training missions.

Near Beppu, often referred to as the Miami of Japan, on the island of Kyushu, the 187th Airborne Regimental Combat team trains and instructs. Here Japanese paratroopers, the nucleus of Japan's airborne self-defense forces, have just completed their initial jump training and are ready to begin teaching their own troops according to methods developed at Fort Benning and passed on by Camp Chickamauga's jump instructors.

The scenic wonders of Beppu include hot springs, thickly populated "monkey" mountain, a massive statue of Buddha, and ever-bubbling *Jigokus,* literally translated as "hells." There is much to photograph and write home about for the off-duty *Rakkasans.*

MEANWHILE, from reveille to retreat the soldiers undergo a rigorous training program designed to keep them physically fit and combat ready. Parachuting, squad tactics, regimental problems, battalion field exercises make every day different from the next and keep the troopers ready to perform their basic mission—to fight any and all aggressors.

Southwestern Command's Camp Kobe is spread out along the shores of Osaka Bay from Kobe to Sakai. It is a gold mine of recreational variety. In winter, skiing and ice skating are off-duty attractions; swimming, sightseeing, hot springs, and boat excursions on the Inland Sea draw vacationers from all of the Army's headquarters.

Nara, often called the art and cultural center of Japan, plays hostess to six million American and Japanese visitors annually. Tourists of all ages, all countries, and all walks of life make the pilgrimage to the ancient capital to feed the sacred carp in Sarusawa Pond and the deer in Nara Park; to climb the stairs of the Five Storied Pagoda, a landmark since 1426 A.D.; to visit the Hall of Daibutsu where the massive 53-foot bronze Buddha has presided since 749 A.D., and to pay a small fee to ring the Big Bell, cast in 752 A.D.

Within this environment the personnel of Southwestern Command can further their education, learn new skills and perfect the old through Troop Education facilities and the University of California Extension Division.

ALL THIS is Army Forces Far East and Eighth U. S. Army—a tightly knit, mobile Army that is the ground defense line in the Far East. From the headquarters at Zama, 30 miles south of Tokyo, to Korea, Okinawa, and the islands of Japan, the network spreads. Within this net United States servicemen and women of the command are performing their jobs, training, aiding in the building of Japan's self-defense forces and Japan's economy, learning more of the Orient and its people and at the same time furthering their own education.

Conservation of strategic and critical materials is a Signal Corps responsibility in the search for

Better Army Communications

I. H. Pratt

HALF a century ago, orators liked to discourse on "our boundless forests, our limitless supplies of natural resources, which will last to the utmost ends of time." But a scant fifty years of rapid advance in technology coupled with increased civilian demand for better living conditions, and ever increasing requirements for defense, national and world wide, have demonstrated that there is a limit to even the most plentiful natural resources.

Many of the materials which are today regarded as absolutely necessary for supplying both civilian and military needs were scarcely known industrially a half century ago—and they come from far off places that would have seemed remote and exotic to the orator of past decades.

There is cobalt, for instance, that must come from the Belgian Congo; and columbite from Nigeria; corundum from South Africa; iridium from Canada; kyanite from British East Africa and India; quebracho from Argentina; tungsten from Portugal and Bolivia.

Military research and development has as one of its prime objectives the best possible utilization of all natural resources, and particularly those which are strategic and critical. The design engineer, specifically, must always consider the adaptability of each item to quantity production and its effect on the supply and availability of strategic and critical materials.

TODAY'S design engineer regards each item from three basic angles—first, obtaining greater functional output per unit of material; second, changing from the scarce material to something more abundant; and third, developing synthetic material.

Several other avenues of approach are also effective in a conservation program. These, however, usually are by-products of good engineering practices and continuous technological advancement. They include miniaturization, redesign, standardization, developing new sources of supply, improved processing methods and reclaiming used or rejected parts.

To assist design engineers in selection of less critical materials, the Department of Defense has devised a formula, based on a weighted index, by which the relative availability of the alternate materials can be determined. Within this listing

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are many materials used extensively in communication equipment.

Signal Corps research and development projects now are being pushed to obtain substitutions or replacements for at least nine of these materials—mica, nickel, cobalt, manganese dioxide, quartz, selenium, sebacic acid, tantalum and lead. Special projects are under way, seeking to investigate all possibilities for achieving greater output per unit of material, substitution, and development of synthetic materials.

MICA provides a good example of the way in which demand for materials has increased. In 1937 the estimated United States consumption of sheet mica—an essential in communications equipment—was five million pounds. In 1950 it was fifteen million pounds. Domestic production was only about six hundred thousand pounds in 1950. The remainder must be imported from India, Brazil, and Madagascar.

Only high grade muscovite mica possesses the inherent characteristics so necessary in communications equipment. It can be laminated into thin sheets of adequate size with good die stamping qualities, excellent dielectric properties and resistance to high temperatures and thermal shock. While domestic micas are numerous, they do not possess the desired qualities.

The Signal Corps is currently directing efforts toward development of synthetic mica and also toward substitutions of other materials. Both programs are producing results.

An electrical resistance melting technique is used in developing a synthetic crystalline flake mica. Commercial production has already begun and is being applied in electronic component parts.

Still another method of producing a new mica ceramic material has been worked out using certain fluorine-containing mica compositions that are reacted in the solid state and then formed by hot pressing. The Brush Beryllium Company has now produced four types of this polycrystalline synthetic mica which are being offered to industry in trial and semiproduction lots.

In the field of substitutes, glass capacitors have been developed to replace certain size mica capacitors. Work also is being continued to improve the characteristics of ceramic, paper and plastic capacitors. It is hoped that before too long the need for natural mica can be eliminated in military capacitors.

NICKEL. While the United States is the largest consumer of this metal, it produces less than one percent of its needs. Fortunately Canada supplies about 86 percent of the free world production of nickel.

As an important alloying element in more than three thousand combinations, only nickel itself can supply such qualities as added strength, toughness, special electrical, electronic and magnetic properties, resistance to corrosion and wear, and other desired attributes.

Meanwhile, design engineers critically analyze any necessity for using nickel in many items under development. Attempts are constantly being made to find substitutes which will insure equivalent performance if it becomes

absolutely necessary to eliminate nickel from certain designs.

Progress is being made in conserving nickel in the supporting braid of new lightweight "spiral-four" cable, developed for use in the new 12-channel carrier telephone systems. This is one of the most important uses of this metal in military communications.

Nickel-containing stainless steels are utilized as the supporting braid material in cable for military communications. Attempts to use such materials as rayon, nylon, fiberglass, and various types of steel proved inadequate, either from strength or electrical viewpoints.

Finally the Signal Corps undertook a research program with the Battelle Memorial Institute which produced chromium-manganese-iron alloys which satisfy the mechanical, electrical and magnetic requirements. Success of this new alloy may lead to elimination of nickel in the spiral-four cable.

COBALT. A double barreled approach is being employed by Signal Corps technicians in an effort to develop synthetic materials and also to obtain greater functional output per unit for items using cobalt. The United States is the largest consumer of cobalt in the world, but must obtain most of its supply from the Belgian Congo. The material is used in high temperature alloys, high speed cutting tool alloys and superior magnetic alloys (alnico magnets).

It is in this last use, as magnets, that the Signal Corps is vitally interested, since the heart of many communication devices is the permanent magnet. The most efficient magnets now are made from an alloy called Alnico V which provides the greatest amount of external energy per pound of critical material.

In attempting to meet the problem through more efficient design of end items, a method has been developed for calculating means of achieving optimum design in magnets. Complicated charts have been formulated, employing statistical and mathematical relations. These can be applied not only to Alnico V, but to all other permanent magnet materials. Savings up to 20 percent of cobalt appear feasible in many applications of Alnico V.

In the second approach, permanent magnet material which contains no strategically critical metals has become available—although so far on a limited scale. This material is essentially a barium ferrite—a ceramic type material. It already is being used on a relatively large scale in England in the manufacture of focusing magnets of television tubes. It is seen as potentially valuable in polarized relays, loudspeakers, microphones and meters in Army communication equipment. The project is being continued to further improve the ceramic material.

MANGANESE DIOXIDE. Of great value in manufacture of dry cell batteries, most high grade manganese dioxide now must come from the African Gold Coast. The Signal Corps is attacking this problem by a comprehensive program in utilization of low grade domestic ores.

Results have already been obtained in development of an electrolytic method for the synthesis of battery grade manganese dioxide

from such ores. Facilities for large scale production now are being established.

Use of such material will relieve this country of dependence on foreign sources and also will result in even better dry batteries.

QUARTZ CRYSTALS. In this field—extremely important for the accurate control of radio frequency—great strides have been made in establishing a synthetic manufacturing process.

Demand for quartz crystals increased during World War II as they were used for frequency control in military mobile radio communication equipment. Currently, most radio grade material comes from Brazil. Commercial deposits in the United States are practically nonexistent.

Two methods now have been developed for production of suitable synthetic quartz using raw materials which are cheap and widely available. As a result quartz as good or even better than the natural material can be produced. This country should eventually be self-sufficient in production.

SELENIUM. Originally an unwanted impurity in copper, selenium now is one of the country's highly critical materials, since it is in growing demand for use in rectifiers for the conversion of alternating to direct current. Such rectifiers are highly important in voltage multiplier circuits for radio and television, radar and wire equipment. Selenium also is used in glass, chemical pigment, ceramic, pharmaceutical, rubber and stainless steel industries.

Conservation of selenium has been effected through technical advances in the design of rectifiers. Plates now have been developed with a "reverse rating" of 40 volts as compared to the conventional 26-volt plates—a saving of about 40 percent. Facilities have been established to manufacture these more efficient plates, and work is being continued in an effort to produce plates that will be almost twice as efficient as the present ones.

Other rectifying devices are being made from germanium, silicon and titanium oxide. Eventually such devices may replace selenium but it is too early to consider these as general substitutes.

TANTALUM. For certain military applications, tantalum capacitors are used where others do not serve effectively—or do not function at all. Oddly enough, tantalum is not found in elemental form in nature but must be made from tantalite-columbite ores. The United States produces less than 1 percent of its annual requirements, and most of the ore comes from the Belgian Congo and Nigeria. Electronic applications account for about a quarter of the total tantalum consumed in this country.

The Signal Corps is attempting to produce more efficient capacitors. Since the capacitance of a porous anode type unit depends upon the total surface area of tantalum which can come in contact with the electrolyte (the material which reacts with the tantalum), efforts are being made to develop anodes with a greater surface area. By altering the size and shape, it is theoretically possible to achieve this goal

and eventually decrease the size per unit capacitance and thus conserve materials.

SEBACIC ACID. That bane of all children, castor oil, is the more widely known name for sebacic acid. It is used in making synthetic resins, synthetic lubricants for jet engines, and in hydraulic brake fluids. The United States produces about thirteen thousand tons annually but must import nearly five times that amount, most of it from Brazil and India.

In Army communications, sebacic acid is important in fabrication of jacketing material for field wire. This must be an insulating material with high abrasion resistance qualities. The insulation comes from polyethylene while nylon material —made with sebacic acid—provides abrasion resistance.

At present, a program is being conducted to develop a synthetic substitute for the nylon jacket, using noncritical materials. It is hoped eventually to develop a single material with both insulating and abrasion resistant qualities to produce the desired effects.

CONSUMPTION of critical materials in a preparedness period may well be a drain on the entire economy, making it more difficult and costly to maintain a high rate of general economic growth. Accordingly, the military has the responsibility of using materials as efficiently as possible, since military strength ultimately depends upon the country's economic resources.

It is upon the design engineer that most of the responsibility actually falls. He has a two-fold duty. From a security point of view, he must conserve those materials that present supply problems during a period of mobilization; from the economic point of view, he must continually find better and more economical means of providing for national defense.

Cognizant of the implications of our Nation's material supply situation, Signal Corps research and development engineers are continuously extending their efforts to achieve a host of practical applications which will make the most of available materials.

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Realistic training for combat includes

Simulating Atomic Blast Effects

Lieutenant Colonel Robert B. Rigg

IN ANY ATTEMPT to recreate the hazards of atomic warfare, the big job is to take some of the mystery out of atomic weapons effects and remove the mumbo-jumbo and cobwebs from the topic of radiation. Get the soldier closer to the atom and build a working relationship. The creation of a nuclear blasted area is one step. Going beyond this you will want to set off some "poor man's" atomic explosions during tactical exercises and demonstrations.

By simulating atomic "bang and blast," *action*, and not just static display or scenery, is introduced.

Actual atomic weapons cannot be exploded to the extent of acquainting all of the nation's troops with these powerful weapons. Motion pictures and training films on the subject portray much of what is to be learned and they should be utilized to the maximum possible extent.

Get your men well acquainted with atomic weapons and their effects because ignorance breeds fear and multiplies confusion.

A FEW lectures and films will not do the job completely. Take for example the case of some military men before the atomic tests of Operation Sandstone at Eniwetok in 1948. There was a big run on cigarettes at the PXs at this atomic proving ground atoll. There were no natives to trade with and no black market to tempt anyone, yet the cigarettes were purchased beyond what was considered normal smoking capacities.

Investigators were put to work and they turned up the fact that some service men were lining their shorts with the tinfoil from cigarette packages!

In the first place, this "tin pants" technique offered no protection. Secondly, the many tests at Eniwetok and in Nevada have proved that men can operate within certain prescribed distances of actual

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LIEUTENANT COLONEL ROBERT B. RIGG, Armor, author of "Red China's Fighting Hordes" and other works on military subjects, is on duty in the General Staff. This, the second of two articles from "Realistic Combat Training and How to Conduct It," copyright 1955 by Military Service Publishing Company, Harrisburg, Pennsylvania, may not be reprinted, as a whole or in part, without permission of the publishers. The opinions expressed are those of the author and do not necessarily represent official views of the Department of Defense, Department of the Army, or any of its agencies.

Example of a simulated atomic destruction area which can be created with exhibits and shelters arranged at varying distances from ground zero—a dugout at 800 yards, culvert at 1,000 yards, and trench or small hill at 1,300 yards.

atomic blasts without harm or injury. The important point in this incident is this: these were selected men who had been given a good degree of orientation on atomic weapons and effects; yet they needed more indoctrination because *unfounded* fears were still present.

So concentrate on effective indoctrination and training on the subject. The government provides you with up-to-date data. Atomic weapons, like first sergeants, are here to stay. Here are some useful texts; more will be forthcoming: *Soldier's Manual for Protection Against CBR Attack,* FM 21–41; *Atomic Energy Indoctrination,* DA Pamphlet 20–110; *Individual Training in Atomic War,* DA Pamphlet 20–112; *Combined Arms Units in Atomic Warfare,* TC 33, 1952.

These texts will provide the foundation for instruction. Now we come to the place in your training where you want to portray atomic weapons on the maneuver or exercise battlefield so that your men will become accustomed to the idea that they can live alongside of these weapons and *exploit* the explosions in combat.

Your men must recognize atomic tactical weapons as *supplementing* and not *supplanting* their role in the ground services.

There are several types of simulated A-bombs being tested to meet military training requirements. Until there is formal military adoption of one or several of these atomic training aids, an effective one developed by Major Bernard F. Allen, with the assistance of Privates First Class Charles Gunthorpe and Joseph MacMillan, is described in the September 1954 ARMY INFORMATION DIGEST.

PROJECTING ATOMIC WEAPON EXPLOSIONS

WORK UP to your realism by providing a solid foundation of information and facts. First come your lectures on the effects, capabilities, and limitations of various types of atomic explosions. Then move outside, if your lectures are not there already, and conduct some demonstrations on "how to protect yourself against atomic attack and explosions." After the demonstrations come the actual employment of atomic weapon simulators during tactical exercises.

Make your demonstration vivid. If you do not have, or have not created an atomic ruin area, you should use a prominent feature, (hill, steeple, water tower) to identify ground zero. The distance relationship between man and GZ should be brought out clearly.

When it comes time to demonstrate with a simulated atomic weapon explosion, you can foreshorten your distances somewhat if you want your men to feel the blast. In the case of the simulator developed by Major Allen, he recommends a 200-yard distance from ground zero to the troops (for demonstration).

Between your student body and ground zero have some foxholes dug. Place combustible materials and inflammables in the foxholes and also place some of them on the open ground without protection. The explosion will ignite the unprotected materials and those in the foxholes will not generally catch fire. Here is a fine demonstration of the protection the earth offers in the form of a deep foxhole. Your troops will climax their lec-

tures with this realistic demonstration after which you can use this A-weapon simulator on some tactical problems.

Tactically, you must employ your atomic weapon effects with judgment and not toss the explosions around like loose hand grenades. On battalion and company size problems, frame your atomic action so that all A-weapons are not on one side.

ATOMIC explosions need follow-up and exploitation. When a blast goes off somebody should be ready to go forward through the blasted area or on its shoulders. Action should follow atomic explosions to capitalize on them offensively or, if necessary, defensively.

Do not let the idea grow up that atomic weapons come to the rescue of every little force that is held up by an enemy on Hill Able or a road block. Ground troops have their mission, their own firepower, and their airpower, but they must live and succeed primarily on their own strength.

Therefore, frame and position your "atomic" explosions with logic and soundness, being careful to orient your men. There is nothing to prevent your use of several A-explosions in one problem. The placement of your atomic weapon explosions should be such that both sides see it and one side gets the effect.

Around the ground zero area establish, and camouflage, materials which will ignite from the blast and fire of your simulator or otherwise flame up so that the area becomes "hot" in at least one sense. After the explosion, squad and platoon commanders must generate their men into action and one of the actions can be "put out those fires."

THE essential thing is to get men moving and accustomed to moving into some sort of action so as to remove the paralysis that can come with a blast. The obvious and priority action is, of course, the pure military one of shoot and move. But orders must come fast on the heels of a blast, and they must be short and decisive.

Granted that only 25 pounds of TNT may have gone up in a mesmerizing cloud of smoke, still it's a nice charge; minds and eyes must be taken off the cloud and fixed on the "enemy."

At the post microsecond of explosion all commanders should have on the tips of their tongues the next order. They should give those orders immediately so that the "bash of the bomb" is followed by the "lash of the tongue"—for here must be implanted in training the tempo and temper of drill field commands.

Discipline—not of new form but of crisp chronology and force—must prevail immediately after the awesome sight and silence of atomic explosions. This will not be developed in the chaos of real atomic explosions, but it can be conceived in doctrine and born and matured on the training field to live in combat.

CASUALTY assessment must be realistic, yet proportionate to each man's distance from ground zero and the protection the man has secured. Umpires should look over the area beforehand and make note of the available shelters. Then there is the question of what radius to

use for real damage effect. This course is directly related to the kiloton yield of the weapon and other factors.

Umpires should immediately assess the men in the open and acknowledge the safety of individuals in foxholes and behind solid items of cover.

There are a variety of ways to assess casualties but not many are suitable for the type of instantaneous action required.

Here is a way to assess casualties. Before the exercise give each man a piece of paper stating—

If an atomic weapon explodes you will immediately try to get shelter, if it is only one step away. If you are in the open and not close to some shelter, turn away from the explosion and drop flat on your stomach at once. Thirty seconds after the explosion, look at your surroundings and see which sentence below best describes your circumstance. This will determine your status:

In a closed tank, personnel carrier, foxhole, trench, dugout, culvert, or ditch.

Behind a solid wall, embankment or hill and did not see the fireball.

Lying flat in open at 3,000 yards or more from explosion.

Standing in open more than 4,500 yards away.

YOU SURVIVED!

Remember your mission.

Get ready to move.

Standing in open with no cover, up to 3,000 yards from the explosion.

Lying flat in open 2,000 yds. or less from the explosion.

Looked straight at the explosion and saw the fireball.

YOU ARE A CASUALTY!

Remain where you are.

No casualty assessment system is foolproof but the above system has the advantages of giving some training along with its function of assessment.

NEVER before in the history of warfare have soldiers had to face the potentiality of such holocausts as the age of atoms offers. From out of the silent ruins wrought by atomic weapons on the ground battlefield there will only emerge from out of any group of living men, those who have been mentally steeled for the awesome period when the wounded groan from pain and the mentally uncertain and panicked lie back because the brain has never become accustomed to the potential of the shock.

The objective of our training effort therefore is to produce units that will successfully prevail with strength, stamina, and skill against superior numbers in that final, horrible hour that is war.

For Army athletes who competed in the Pan-American Games and for others who qualify, it's

Next Stop—Olympics

Colonel L. W. Jackson

WITH trophy rooms at many posts now sparkling with displays of individual medals won at the Pan-American Games in Mexico this spring, the eyes of Army athletes now are turning to the Olympic Games which will be staged in Australia in 1956.

In addition to those who took part in the Pan-American Games—a sort of Western Hemisphere warmup for the worldwide Olympics—any man or woman in the Army who feels qualified is urged to try out.

The roster of Army eligibles is steadily being expanded as records of outstanding performance are compiled. At Mexico City in the Second Pan-American Games, 42 Army men and one woman brought home 13 team awards and 24 medals for individual competition.

EARLIER an Army representative, Lt. Harlan Johnson, won ninth place in the gruelling World Modern Pentathlon Championships staged in Hungary in the fall of 1954. Of the five Army members who competed in the Olympic bobsled trials at Lake Placid last February, two qualified for the team. That same month seven Army skiers took part in the ski trials at Franconia, New Hampshire, and Vermont. Two made the team which will represent the United States at the VII Winter Olympic Games at Cortina, Italy, in January 1956.

Increased military participation in various international sports events is in keeping with directives issued by Secretary of Defense Charles E. Wilson. These were circulated to the Armed Forces following an appeal from the United States Olympic Committee. Military participation would be highly desirable, it was pointed out, since both the Pan-American Games and the Olympics come in the midst of college terms.

Service athletes—whether from the Army or any of the other services—come under control of the United States Olympic Committee. They are made available, at no expense to the services, through a joint service athletic council working under the Office of the Assistant Secretary of Defense for Manpower and Personnel.

Acting for the Army, The Adju-

COLONEL L. W. JACKSON, Adjutant General's Corps, Chief, Special Services Division, Office of the Adjutant General, is also Army representative on the Department of Defense Committee for International Sports Competitions.

tant General provides a representative to the Department of Defense Committee for International Sports Competitions. This group serves as the liaison, coordinating and advisory agency for the Secretary of Defense and between the Services.

ARMY members who feel that they possess the requisite ability are invited to make application through channels to The Adjutant General, Department of the Army, Washington 25, D.C., ATTN: AGMS. The application, in triplicate, should contain the individual's name, grade and serial number; age of applicant and current organization and station; date of completion of basic military training; and date of completion of current term of service or category expiration. A summary of pertinent competitive experience—listing dates, places and performance records in events in which the athlete has taken part—also should be furnished.

The application must contain a statement that the individual volunteers to participate in training for and to represent the United States in international sports competition and should be accompanied by an affidavit that the individual is an amateur sportsman and a citizen of the United States. Full details are spelled out in Army Regulation 28–50, dated 30 November 1954, and in DA Circular 28–12, 7 June 1955.

SELECTION of individuals usually is based on results of All-Army championships, or of competitions staged by a major command, or by performance in national or international competition such as the Pan-American Games. Additionally, the national civilian sports organization controlling the entry of the United States representatives may request the service of an individual by name.

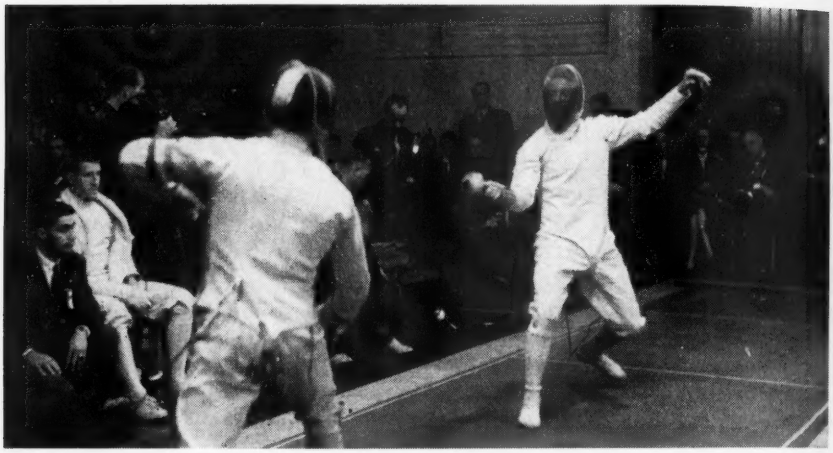
However, if an individual cannot participate in some staged competition, but may be well qualified, he may be selected upon presentation of certified information concerning past athletic records.

Army personnel thus may compete or may be certified for selection in any of the various sports events, individual or team, that will be staged at the Olympics. The Modern Pentathlon—one of the mandatory sports included in the Olympic Games—requires all-around versatility in riding, fencing, swimming, shooting, and running. The first United States entrant in this gruelling five sports event in 1912 was a young lieutenant named George S. Patton, Jr. (He took fifth place at that time.)

In addition to competition in the quadrennial Olympics, a World Modern Pentathlon Championship is held annually. This year Macolin, Switzerland, will be the site. The 1955 competition will be conducted 21–26 October, with sixteen nations expected to enter teams. United States representatives were determined through the Interservice Triathlon Championships in June at Fort Sam Houston, Texas.

AS WITH the recent Pan-American Games, the Army through its Special Services officers on every post is planning tryouts by military personnel for the 1956 Olympics. Final selections will be made solely on ability in each individual sport.

Each of the armed services plans



Lieutenant Harlan Johnson fences with Hungary's defending champion during Modern Pentathlon competition in Budapest last fall.

to select its members whose demonstrated ability stamps them as Olympic team potential and to give them an opportunity to train in preparation for the trials. In some sports, this training will consist of assembling all candidates as a joint Armed Forces squad under the supervision of the service assigned the responsibility of monitoring that particular sport. These joint efforts are planned in swimming, track, wrestling, modern pentathlon, ice hockey, gymnastics, and fencing.

In other sports such as boxing, basketball, weightlifting, cycling and shooting, each service will make separate arrangements for training its candidates. Regardless of the method used for training, the service candidates will be entered in the final Olympic trials.

MEXICO CITY proved an ideal location for the Pan-American Games. The weatherman cooperated, and every day was sunny and warm. Although most of the Americans spoke no Spanish, they had few language difficulties. Special English-speaking police were assigned to areas were the Americans were likely to be and, even when sign language was resorted to, understanding was complete.

Athletes were billeted on the University of Mexico campus, internationally renowned for its modern and striking architecture. Teams from the various countries were quartered together in the dormitories, and many fast friendships were made. The American team was credited by observers with having done a first-rate job as goodwill ambassadors.

Due to financial restrictions the American team arrived only a week before the start of the competition —an insufficient time to become fully acclimatized to the rarefied air at the 7,300-foot altitude.

Lack of time to practice together was detrimental to some of the teams, especially the American baseball unit which had only two days of practice. With four Army

Pvt. Alan G. Wadsworth of Camp Gordon, Georgia, successfully negotiates the difficult Fifth Jump in the cross-country riding event.

men on the team, it finally won second place after getting off to a poor start.

IN BASKETBALL the American team, with four of its fourteen members from the Army, lost one game but won the championship. Their winning performances were impressive enough to move one Mexican radio announcer to remark, "The Americans are giving the world a lesson in perfect basketball tonight."

In gymnastics, a soldier chalked up a first. He was Pfc. John C. Beckner, of U. S. Army, Europe, who won the sidehorse, all-around, free-hand exercise, and parallel bars competition. He won more gold medals—five in all—than any other individual in the Games.

The American rifle and pistol teams also took just about everything in their events, winning first place in the rapid-fire pistol and free pistol; second in the free pistol; and third in the small-bore rifle category. Master Sergeant Huelett Benner of the United States Military Academy won the championship in rapid-fire and free pistol.

Lieutenant Bob Clotworthy of the United States Military Academy was nosed out by Mexican Juaquin Capillo, world famous diver, in the 10-meter platform event and then proceeded to take a third in the 3-meter event. The Army's only woman entrant, Lieutenant Betty Mullen of Walter Reed Medical Center, took second in the 100-meter butterfly. She also was a member of the winning team in the 400-meter medley relay.

An individual gold medal for the 100-meter free-style was carried off by Lieutenant Clark Scholes of Fort Carson, Colorado. He also was a member of two winning American relay teams.

Private James McLane swam off with two gold medals, one in the 1,500-meter free-style and the other in the 400-meter free-style. He also was a member of the winning team in the 800-meter free-style relays.

In track and field, Lieutenant

Rodney Richards won two solid firsts in the 100- and 200-meter dashes; and he was also a member of the first place 400-meter relay team. In other events American soldiers placed or were members of winning teams in eleven events.

Private Lou Jones, Fort Knox, won the 400-meter run, setting a new world's record of 45.4 seconds, and Private Roselyn Range, Fort Ord, took the broad jump with a leap of 26 feet 4⅛ inches, while team mate Private John Bennett, Fort Leonard Wood, was literally on his heels at 26 feet 3⅝ inches. This was the first time since 1935 that two men had exceeded 26 feet in this event. Range's jump was a new Pan-American record.

In modern pentathlon, the United States team of First Lieutenant Edgar A. O'Hair, Army, Lieutenant Junior Grade William J. Andre, Navy, and Private Alan G. Wadsworth, Army, finished second to the Mexican trio of experienced Olympic pentathlon competitors. O'Hair was also second in the individual standings and thus in his first competition became a threat for future international honors.

IN RETROSPECT, the Second Pan-American Games were a complete success for all concerned. The American team won by a large margin. Inter-hemisphere relations were strongly bolstered. The Army proved that its members can contribute significantly to United States representation in international sports competitions and can compete with athletes of other nations on an equal basis.

Next stop for Army athletes is the World Olympics of 1956.

Olympic Events

SPORTS EVENTS in the 1956 Olympic Games (to be held 22 November through 8 December 1956 at Melbourne, Australia) include:

Track and Field. 100-, 200-, 400-, 800-, 1,500-, and 10,000-meter, marathon, 110- and 400-meter hurdles, 3,000-meter steeplechase, 400- and 1,600-meter relay; 20,000- and 50,000-meter road walks; high jump, broad jump, pole vault, hop step and jump, shot, discus, javelin, hammer, and decathlon.

Boxing. 10 weight classes. *Cycling.* 1,000-meter time trial, 1,000-meter sprint, 2,000-meter tandem, 4,000-meter team pursuit and 190.3-kilometer road races. *Fencing.* Foil, epee, and sabre (individual and team). *Gymnastics.* Free exercises, rings, parallel bars, pommelled horse, long horse, horizontal bar, and 12 exercises.

Modern Pentathlon. Riding (5,000-meter), fencing (epee), pistol shooting (25-meter), swimming (300-meter free style) and cross-country run (4,000-meter). *Rowing.* Single and double sculls, pair-oars with cox, four oars with and without cox, and eight oars with cox. *Shooting.* Free rifle (300-meter), free pistol (50-meter), rapid fire pistol (25-meter), running deer (100-meter), clay pigeon, and free rifle small bore (50-meter). *Swimming.* 100-, 400-, and 1,500-meter free style; 100-meter backstroke; 200-meter breaststroke; 200-meter butterfly stroke; 800-meter free style relay, and 3-meter springboard and highboard diving.

Weightlifting. 7 weight classes. *Wrestling.* 8 weight classes in Greco-Roman and in free style. *Yachting.* International 5.5-meter, "Dragon", "Star", and 12 square meter classes. "Finn" Olympic Dinghy 1952. *Canoeing.* 1,000- and 10,000-meter Kayak singles and pairs, 1,000- and 10,000-meter Canadian singles and pairs. Also team competition will be held in *Basketball, Soccer, Field Hockey, Water Polo,* and *Baseball.*

Rebuilding a war-stricken land in history's biggest aid program is the job of

KCAC in Korea

Master Sergeant Parker D. Hanna, Jr.

ANY SOLDIER receiving orders to Korea today is not exactly sure of what to expect upon his arrival. If he has never been in Korea before, he probably calls up visions of extremely cold winters and hot dusty summers. And if he has been here before, as many thousands have, those conditions are remembered facts.

Although life is pleasanter now, the odors, the distance from home and family, the lack of some facilities, haven't changed much if at all. And the rigors of the weather are tolerable only because there is more shelter.

Added to these problems some soldiers find themselves engaged in one of the most complicated assignments in military history. These are the men assigned to "Headquarters KCAC." But the work they perform is perhaps the most satisfying, measured in terms of accomplishment, that any of them have known in the Army.

KCAC is the alphabet-name for the Korea Civil Assistance Command. Unique among Civil Affairs and Military Government units, it is a little known organization charged by definition with the twin responsibilities of "preventing disease, starvation and unrest" and "aiding in the reconstruction and rehabilitation of democracy's most recent battleground, the Republic of Korea."

KCAC has the dual motivation of minimizing interference with the tactical operations and logistical support of combat troops (by assisting the destitute population of the rear areas); and of aiding in the establishment of a barrier to Communism. The organization is commanded by a general officer with a military Chief of Staff and a military Adjutant. The Deputy Chief of Staff is a civilian as are the heads of some staff sections.

OF THE approximately 700 United States and United Nations personnel in the command, about 200 are civilian. KCAC is a directorate type organization and has such major staff divisions as Public Facilities and Government Services Divisions, both concerned solely with civilian activities.

Under Government Services Division, for example, come Social Affairs, Labor, Public Health, Legal, Agriculture, and Public Safety Branches. These are

MASTER SERGEANT PARKER D. HANNA, JR. is assigned to Korea Military Advisory Group.

designed to match equivalent branches of the government of the Republic of Korea, with which KCAC works closely.

Operating in the field are nine provincial "teams." Their commanders—usually Army colonels—are called Team Commanders, and their staffs are made up of engineers, rehabilitation and other specialists, both military and civilian. Another team takes care of the problems of Seoul, the capital city, and smaller subteams are located at major ports and isolated points.

THE JOB assigned to this varied assortment of specialists is impressive in its scope. Basically, it is to see that the money provided by official U.S. Government and voluntary relief organizations is used effectively for the temporary relief and permanent long-term rehabilitation of South Korea.

Independent of other military commands in Korea, KCAC comes directly under the Far East Com-

Voluntary Assistance to Korea

THE MEN of the United States Eighth Army in Korea have made, through their personal efforts, a most valuable contribution to American foreign policy. They have demonstrated to the world that while Communism destroys and exploits the population under its control, the United States and the free world assist those who need aid.

Even during the height of the fighting in Korea there was a spontaneous generosity by the American soldiers toward the Korean war victims. Their assistance to the Korean people has been a unique tribute to the generosity of American fighting men and a monument to the traditional American way of doing things. There is no parallel in history where a combat Army in the field during active fighting participated as actively as did our GI's in rehabilitating a war-torn nation during the fighting.

Aid to Korea began through an informal sharing of rations and the collection of funds among the men of the Eighth Army for the support of destitute orphans and refugees. . . . Untold numbers of soldiers, sailors, airmen, and Marines, moved by the pitiful plight of the Korean people, wrote to their families, their friends, their churches, and their schools requesting donations of clothing and other relief goods.

Assistance by the men in the Eighth Army has included such projects as the rehabilitation and construction of schools, churches, orphanages, civic buildings, public utilities, bridges, and similar projects. A great number of military units adopted an orphanage for which its members provided all necessities, as well as such frills as an occasional candy bar.

A typical example of a project of this kind was the establishment and supporting of a "Boys' Town" for 200 Korean orphans by the Fifth U. S. Regimental Combat Team. In disasters such as the numerous fires which broke out in Pusan, U.S. military men have given unstintingly of their time and assistance and in a fashion that cannot be measured in dollars and cents.

As an outgrowth of the strictly voluntary program by the men in the Eighth Army, there was started the Armed Forces Assistance to Korea Program. President Eisenhower authorized the expenditure of 15 million dollars of appropriated funds to be used by the Army in this program. The responsibility for the direction of the program was entrusted to General Maxwell Taylor, recently named by the President as Chief of Staff of the Army. An additional 5 million dollars has been earmarked to continue this program. With these

mand in Tokyo. Its working partner is the United Nations Korean Reconstruction Agency (UNKRA), with which it divides responsibilities in the fields of relief and rehabilitation. (See "Civil Assistance in Korea," February 1953 DIGEST.)

On paper there is a fairly clear demarkation line dividing responsibilities between the two organizations. UNKRA is responsible primarily for providing aid in industry, fisheries, mining, education, housing, irrigation, forestry, and flood control. KCAC's responsibility embraces agriculture, transportation, communications, public works, relief and welfare, health, power and a joint service for distribution of aid goods.

In actual practice, however, the work of both is intertwined and shades into each other. It is not at all unusual to find UNKRA personnel scattered throughout KCAC's divisions. Any hard and fast separation of powers, responsibilities

funds a total of 2,120 projects have been authorized and planned. Over 80 percent of these projects have been completed. . . .

United States units were authorized to use military equipment and to assume supervisory charge and technical direction of the construction of these community projects such as the rehabilitation of churches, schools, libraries, hospitals, sanitary facilities, and community centers.

Troop units down to and including companies undertook the sponsorship of individual projects. With the cooperation of the Korean people they have established the Armed Forces Assistance to Korea Program as one of the outstanding accomplishments in our U. S. aid to Korea. The resulting benefit to the Korean people has been three times that of the initial value of the expenditures that were authorized. . . .

Up to this time 154 churches, 156 orphanages, and 544 schools have been completed. The most ambitious of our Armed Forces Assistance to Korea projects is just getting under way. It will be a chest surgery hospital and will be Korea's only surgical facility of this type to fill an urgent need. This hospital will be dedicated as a lasting monument to all of the Eighth Army soldiers who fought and died in Korea.

The Armed Forces Assistance Program has also played an important part in the great resettlement program known as Operation Rice Bowl which has returned more than 95,000 displaced persons to abandoned farm land immediately south of the demilitarized zone in Korea. This particular area was the scene of much of the bitter fighting during the hostilities and all that remained in the area was barren landscape. Villages had been destroyed, dams had been ruined and the area had been completely depopulated. Thousands of acres of rich farm land lay idle.

The Korean Civil Assistance Command undertook the task of resettling farm families on this land. Entire villages were built from the ground up and our Armed Forces Assistance to Korea Program provided these new communities with their administrative offices, schools, churches, dispensaries and hospitals. This resettlement program, only a few miles behind the front lines, has been an outstanding success.

From an address by Secretary of Defense Charles E. Wilson at the dedication of the Texas Friendship for Korea, Houston, Texas, 20 June 1955.

Fertilizer supplies are loaded at a South Korean port under supervision of KCAC personnel.

and activities would obviously not serve an efficient, fast-moving reconstruction program.

KCAC personnel are constantly in the field supervising construction jobs or inspecting the results of work done. They see the end results—thousands of permanent homes where pasteboard shacks and tattered tents existed before; modern water supplies in place of disease-filled streams and wells; bright, modern schools filled with children well-clothed, well-fed and

Lumber for new homes, schools, and hospitals is on its way to replace pasteboard shacks and tattered tents.

healthy, due to KCAC activities.

THE civil aid program in Korea operates on a scale that dwarfs anything ever done before in the field of relief and rehabilitation of a war-devastated country. All the experience gained elsewhere by government and private agency workers has been brought to bear in the Korean aid program.

Statistics seldom indicate actual situations for they show only totals, norms and medians. But when statistics reveal that nearly one-sixth of the population of Korea were homeless in the middle of 1953, but now have homes; that 140,000 people were suffering from typhoid, typhus, diphtheria, or smallpox (which killed 25,000 in the first six months of 1951) but that only a few hundred cases were reported in 1954 (and less than a hundred died)—when such figures are translated into terms of one's own family, neighborhood and city, then the statistics begin to have a meaning.

Add to this the figures on power plants rebuilt, water systems rehabilitated, roads paved, schools, orphanages and hospitals constructed, and the picture begins to show that an entire nation has been transformed.

KCAC's Public Safety Branch assists provincial police with logistical support and advice.

THE PROGRAM is far from ended. Outside help must continue to enable South Korea to provide a well-trained and well-equipped army as a bastion against Communist aggression in Asia. Only by continued economic aid can Korea

maintain for its people the required standard of health and welfare and still be able to maintain the world's fourth largest army as a key defense force in the Far East.

Here in the world's youngest democracy, the Koreans are learning rapidly how to handle their own affairs, absorbing decades of experience in a relatively short span of time. It is here that KCAC has performed a vital mission—helping the Koreans help themselves.

And when KCAC personnel return home, they will carry with them a new concept of what Korea really is—not just cold, heat and discomforts, but bright, healthy children; new hope for millions; a new modern industrial nation rising from the shambles of Communist oppression and destruction.

Army Aviation Training

IN THE following letter, General W. B. Palmer, Vice Chief of Staff, calls attention to the need for applicants for Army Aviation training—

"1. The emphasis on mobility and dispersion in the Army today necessitates a large expansion in the Army Aviation Program. One of the most critical obstacles to be overcome, if the planned expansion is to be successfully carried out, is the low application rate for flight training.

"2. To support the planned expansion it will be necessary to increase the input to 200 officers per month into the Aviation Flight Training program during Fiscal Year 1956. This will require an application rate of approximately 300 volunteers per month, inasmuch as experience has shown that one-third of all volunteers are unacceptable for flight training under the requirements outlined in AR 605–96. In other words it will be necessary to attain an application rate which will provide 3,600 officers or 9 percent of all eligible lieutenants in the Army, as volunteers for flight training each year if the proposed program is to be accomplished.

"3. The problem is one of quality as well as quantity. To date approximately 60 percent of the officers entering flight training are newly commissioned officers without troop experience. The fact that relatively few eligible officers volunteer for flight training while on duty with troops is attributable largely to the reluctance on the part of the commanders at all levels to lose officers from their units, and the effect that this discouragement has upon the eligible officers of their commands. The temporary loss in efficiency of the individual unit due to a turnover of officers is a relatively minor consideration when compared to the advantages which will accrue to the Army as a whole upon achieving an effective Aviation program. While newly commissioned officers, of necessity, will continue to be accepted for flight training, it is in the field of eligible lieutenants now serving with troop units that the greatest increase in application rate is possible and desirable.

"4. The Chief of Staff has directed me to convey to you his desire that the Army Aviation Program be brought to the attention of all eligible officers, and that the maximum number of experienced officers be encouraged to enter this field. Accomplishment of the proposed Army Aviation Program will require active and wholehearted support of aviation recruiting activities by all commanders concerned. AR 609–96 adequately delineates commanders' responsibilities for the support of this program."

Conditions of modern warfare underscore the importance of

A Tactical Role for Helicopters

Major Nelson A. Mahone, Jr.

THE VERSATILE helicopter, which emerged from its embryonic stage after its baptism of fire in Korea, has assumed a position of vital importance and is destined for bigger things in our modern Army.

With the advent of nuclear warfare, the Army must rely heavily on highly trained soldiers, greater firepower and, most important, increased tactical mobility both on the ground and in the air.

Already, military use of the helicopter in combat, in training maneuvers and in numerous tests has demonstrated that this aircraft can accomplish many of the missions required for full aerial mobility.

It can carry troops and their equipment directly into battle, ferry materiel and troops from depots and staging areas to the combat zone, over difficult and often inaccessible and impassable terrain, where they can unload within the battle-lines. Its tactical usage is practically unlimited.

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ALTHOUGH helicopters made the headlines primarily as "mechanical angels of mercy" in Korea during 1950–53, the limited number and size of such aircraft then available prevented full exploitation.

Under present concepts developed by the Army, transportation helicopter companies are now undergoing training with the primary purpose of performing "tactical mobility, supply and resupply" missions. These broad terms encompass the ability to perform tactical aerial transportation of men and materiel which provides greater mobility and dispersion for the Army in battle. In addition, reconnaissance and utility helicopters will continue to perform such missions as aerial evacuation of wounded, reconnaissance, wire-laying, air control of ground troops and the like.

SINCE the beginning of recorded history, military leaders have sought to increase the mobility of their forces. During the years preceding World War I the United States Army was largely dependent on the mule and the horse cavalry for its mobility. When the internal com-

Helicopters were widely used to evacuate the wounded in Korea, as in this scene behind the firing lines.

bustion engine was introduced, the truck assumed much of the burden of moving troops and supplies, yet this did not insure tactical mobility.

As improvements in transportation means were introduced, the Army was able to enhance its tactical mobility. However, as late as World War II the Army mule in many areas remained the best available mode of transportation for moving military equipment over rugged mountainous or hilly terrain. Meanwhile, the search for alternate solutions went on.

Such innovations as the "Jeep," the "Weasel" and the "Otter" helped ease the task of tactical transportation over mud, snow, mountains, and hills. These vehicles, however, did not provide the complete answer to the tactical commander's problem. Still needed was a means which could carry more, go faster and not be plagued by terrain obstacles. Then the helicopter entered the picture.

The "chopper," as it is affectionately called, was developed just prior to World War II. It had only limited use, and no tactical use, in that war because of the small number available. Based on its wartime and postwar record, however, the Army in 1949 established a requirement for large helicopters capable of carrying both troops and supplies. Thus the Army developed an aircraft with the capabilities of the Army mule and the characteristics of a modern tactical vehicle. It could be used in forward areas of the combat zone with only low ceilings and visibility restricting its operations. Its possibilities for combat use were limitless.

WHEN the fighting in Korea began in 1950, the Army helicopter was introduced in battle. Some unfamiliar with its use eyed it with skepticism. One of its primary missions there, and one which has proved it invaluable, was the evac-

uation of wounded. It also performed many useful reconnaissance and supply roles, but again, due to the limited numbers available, its tactical use was relatively restricted.

With eyes on future employment, the Army on 24 October 1950 published the first table of organization and equipment for a helicopter transportation company. This unit, activated a month later, was known as the 1st Transportation Company (Helicopter), later redesignated the 6th Transportation Company (Helicopter).

Although considered a light-cargo helicopter company, this unit at first was equipped with seven reconnaissance-type, H–13 helicopters, the only 'copter available at that time. In August 1951 the company was employed in Exercise Southern Pine. This exercise, and subsequent maneuvers in which helicopter company concepts were tested, aided in development of present-day doctrine.

As a result of various field trials, it was found that helicopters used for supply missions could also be utilized for medical evacuation during return flights. It was determined also that better radio equipment for aircraft was needed, and sufficient spare parts and supplies must be readily available to the maneuvering force.

IN JANUARY 1952 the 6th Transportation Company (Helicopter) took part in Exercise Snow Fall, this time under winter conditions. Its mission included troop transport, movement of supplies and medical evacuation. It was still using the reconnaissance and utility H–13 Bell helicopter but also by then had two of the "new" H–19's.

Next came Exercise Long Horn. There, additional tasks included psychological warfare (loudspeaker broadcast), reconnaissance and surveillance, fire survey by fire marshal and maneuver control.

The exercise proved that reconnaissance helicopters could be used satisfactorily for missions other than those stated in the table of organization and equipment, and it was recommended that the "table" be revised. The value of the cargo helicopter (H–19) was confirmed when it was found that it could move sizeable quantities of supplies over impassable terrain effectively and expeditiously. This was the key to its future tactical employment.

WITH the experiences of combat-type training maneuvers behind them, the 6th was sent to the Far East in 1953 and by March was fully operational in Korea. This unit, the first in the Army, received its baptism of fire on 20 March 1953 when it was called to perform an emergency resupply mission for forward elements of the 3d Infantry Division cut off from normal supply methods by local flood conditions.

This mission involved the airlifting of 34,000 pounds of cargo—rations, gasoline, oil and lubricants and ammunition—and the evacuation of casualties from forward areas as a result of the action on "Old Baldy." Casualties were picked up at regimental clearing stations and transported directly to an evacuation hospital in the Seoul area. During this entire period the 6th was simultaneously undergoing a strenuous unit training program designed to further develop mass employment operating techniques.

In the meantime the Army ac-

tivated other transportation helicopter units. The 13th Transportation Helicopter Company also was sent to Korea, six months after the 6th arrived there. These units were employed primarily as logistic support vehicles, under both administrative and tactical conditions.

During the Korean conflict, the two units were credited with participation in six major tactical operations. Of these, two involved the movement of troops. The remainder were logistic support operations, or movement of supplies.

In every instance, combat commanders were reportedly pleased with the results. Lt. Gen. I. D. White, as Commanding General, X Corps in 1953, stated, "The helicopter delivery of lightly equipped combat elements, directly to critical blocking and holding positions in advance of the main body of a striking force, is a practical maneuver."

These words were reiterated when Gen. Maxwell D. Taylor, Eighth Army Commander in 1953, stated in part, "The cargo helicopter, employed en masse, can extend the tactical mobility of the Army far beyond its normal capability."

WHILE the two helicopter companies in Korea were making names for themselves in combat, training maneuvers continued to evaluate and reevaluate the doctrine, tactics, techniques, and equipment of other helicopter units.

During Exercise Snow Storm in February-March 1953, these and other missions were put to test under cold weather conditions. Aircraft used included eleven H–19's and only one H–13. In one phase of the exercise calling for a troop movement of a reserve battalion to protect the flank against aggressor attack, the H–19's moved 588 personnel 11 miles in approximately three and a half hours. They also transported 40 tons of cargo ten miles in three hours. The mission was considered a success.

This training task was a positive step towards development of the Army's planned use of tactical helicopters. It represented the first time that cargo helicopters in any substantial number were used in an extended field exercise. According to the Exercise Director, Lt. Gen. Withers A. Burress, "The cargo helicopter is practical, useful and opens a new field and concept on the battlefield. Development along this line is believed highly desirable."

DURING 1953 in Korea the 6th Transportation Helicopter Company exhibited its versatility through the operational move of elements of a field artillery battalion laterally. The 69th Republic of Korea Army Field Artillery Battalion, 20th ROK Army Infantry Division, was moved laterally from its reserve position by nine H–19's. This movement involved a battalion advance party, fire direction center and communications personnel and cannoneers. Small arms ammunition, fire control instruments and artillery ammunition were carried externally.

In all, 192 troops and 4800 pounds of cargo were transported in two hours and twenty minutes. From this mission, it was learned that utilization of helicopters for movement of troops could be accomplished within existing command and administrative channels.

An H–19 helicopter takes off with a cargo net full of supplies in Operation Skyhook—an exercise which tested methods of supplying a front-line division entirely by air.

In line with its evolution and present concepts of employment, the term "cargo helicopter" must now be broadened to "tactical transport helicopter." The helicopter is proving to be more than merely a mode of transportation. Field army commanders responsible for use of helicopter companies are finding them useful for accomplishing tactical missions as well. As the number of helicopter units increase, the tactical mobility, supply and resupply missions of such units will become as vital to field army operation as any other tactical means at the commander's disposal. The day may come when such centralized control may be delegated to lower echelons of command, at corps or perhaps division level.

EXPERIENCES of the Army's two helicopter units in Korea, coupled with various training tests and maneuvers, provide positive indications of the unlimited missions these aircraft can perform. In postwar Korea, for example, a series of training tests were conducted under tactical conditions. During the first of these, Skyhook, in May 1953, the 6th Transportation Helicopter Company used twelve H–19's to provide logistical support for three main line of resistance infantry regiments for three days.

The tactical situation was such that the helicopters could be used as the primary means of transportation. Accordingly, a plan was developed to determine the feasibility of using helicopters as the *only* means of support.

H–19's delivered supplies from infantry division supply points to battalion supply points. Supplies were carried externally except for United States mail and perishables. As in any exercise, a number of deficiencies emerged but the main lesson learned was that helicopter

units are capable of providing all logistic support for an infantry division for an extended period.

SHORTLY after this exercise, the 6th was called on to perform another tactical transport mission. This involved the movement of an infantry company of the 279th Infantry Regiment from Sokchori to Inje, to secure high ground and defend the X Corps command post from enemy parachutists.

This training exercise taught additional principles of employment. It proved that the helicopter delivery of lightly equipped combat element is a practical maneuver. Similarly, Exercise Skyhook I in Korea during June 1953 provided excellent experience for the planning and operating personnel.

As a result of these exercises, division and corps commanders testify that the helicopter is a reliable means of rapid, tactical transportation. In his report on Skyhook and Skyhook I Maj. Gen. Samuel T. Williams, former Commander of the 25th Infantry Division, stated, "One company of helicopters can support three MLR regiments."

IN VIEW OF successes already achieved with the H–19 type, helicopter units soon to be equipped with the larger and more efficient H–21, H–34, and H–37 tactical transport helicopters seem destined for bigger and more important operations in future combat situations.

These larger aircraft will, of course, create new problems and increase technical support requirements. But at the same time, and of far greater importance, they will increase the potential of a tactical transport helicopter company. Such a unit, in the not-too-distant future, will be capable of moving tactically an entire infantry company plus the necessary ground transport vehicles. Thus, tactical units could be moved without sacrificing unit integrity.

Even under present plans which call for the organization and training of 36 helicopter companies, this would mean that the Army could eventually move an entire infantry or airborne division by employing tactical helicopters.

WARTIME and test usage have proved that the tactical transport helicopter is a factor of positive military value. As tactics, techniques, and doctrine are developed, additional uses for these versatile aircraft will be found.

Meanwhile, and for the immediate future, their employment will materially aid the field commander in the accomplishment of his tactical mission—particularly in the light of modern conditions of warfare in which mass destruction weapons dictate the absolute need for dispersion and ever more tactical mobility.

Home of unusual small arms, the Springfield Armory Museum is a storied place of

Weapons on Parade

Captain Chris L. Dvarecka

WHEREVER gun collectors gather, the conversation eventually turns to a discussion of the small arms display in the Springfield Armory Museum at Springfield, Massachusetts.

The Museum is located in the heart of the 161-year old Springfield Armory, center for American small arms manufacture and dean of all United States arsenals, established by the Third Congress in 1794. (See "Springfield Armory—Pioneer in Small Arms," July 1954 DIGEST.)

Creation of an Ordnance small arms museum was the idea of Col. J. G. Benton, commanding officer of Springfield Armory from 1866 to 1881. Originally, Col. Benton's project was to provide a display area for weapons made at the Armory. His first action in this direction was a request to the Chief of Ordnance in 1866 for specimens of small arms materials then reposing at the Washington Arsenal. Largely as a result of this request the Springfield Armory Museum was formally established in 1871.

An opportunity to enlarge the scope of the Museum came in 1876 when some 700 weapons displayed at the Centennial Exposition at Philadelphia were obtained for permanent exhibit. The Museum thus acquired a prize collection of both American and foreign-made shoulder weapons.

Today the Springfield Armory Museum lists more than five thousand pieces on display. Besides exemplifying the actual growth of American military weapons since 1794, the collection includes the finest obtainable in swords, pistols and rifles made around the world.

VISITORS to the Museum are usually surprised to learn that the Springfield Armory at one time manufactured swords for military personnel—and pistols, too. Several of these early pistols could easily break the wrist of those who fired them. The caliber .50 powder charge and recoil could easily do the trick.

Several of the exhibits were unusual enough to come to the attention of the late "Believe-It-Or-Not" Bob Ripley. One of these is a Civil War rifle, its barrel a twisted and crooked length of tortured metal.

The "Crooked Gun" was originally a Model 1864 Springfield Rifle. Like most of the weapons of that period, it was manufactured at the Springfield Armory and finally issued to a Union soldier. The

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This part of the Museum houses rare pistols and a case of Garands. At extreme right is the machine gun section.

weapon saw its share of action, but its chief claim to fame came during a stormy night filled with flashes of lightning and the booming of thunder. Carried by the Union soldier on guard duty, the gun became wet and slippery in the pelting rain. Then came an unusually bright flash of lightning.

The Union soldier dropped to the ground as if struck by a bolt from the storm-filled skies. Painfully he picked himself up from the sodden ground, aware of a certain numbness in his feet and a smell of scorched leather in his nose. Looking down, he observed to his amazement that the soles of his shoes had been burned off.

He then bent down and groped for his gun. What he found was a crooked length of rifle barrel mounted on a wooden stock. The "Crooked Gun" had been born—the stepchild of a bolt of lightning upon man-made steel.

CURIOUS, too, is the story of the Model 1861 Springfield rifle which experienced a one-in-a-million accident. It concerns a Union soldier who raised his gun, sighted along the barrel and slowly squeezed off a shot at an enemy. At the moment the trigger pull reached its maximum, the Union soldier felt a shock which was followed by a bursting of the barrel receiver. Believing that his barrel had burst through some malfunction, he looked for the cause.

To his amazement he discovered —embedded against the nose of his bullet and firmly soldered to the chamber in the barrel—a Confederate bullet. The impossible had happened! A Southern ball had entered the muzzle of the

Union rifle at the same instant that the Union cartridge was on its way. A fraction of an inch to either side and the Union soldier might have been a permanent casualty.

EQUALLY curious is the Model 1860 Lawrence & Sharps "Coffee Grinder" rifle. Originally issued in limited quantities to combat troops during the Civil War, only fifty of these Sharps rifles were manufactured. The Museum has one of the original fifty on display.

This unique weapon was a product of its times. During the Civil War, Union troops were issued coffee rations in the form of coffee beans. In order to pulverize the ration, soldiers usually placed the beans on the nearest rock and pounded them with the butt of their rifles. Needless to say, rifle butts soon began to show wear and tear with a resulting inefficiency of action.

The end result was a call by the military for some rifles with built-in coffee grinder installed in the stock. Also supplied was a small handle which could be placed in the center of the grinder and turned in such a way that coffee could be ground almost instantly. Without a doubt, the soldier issued such a gun was one of the most popular men in his outfit.

ANY acquisition which is rare and interesting automatically becomes a proper weapon for display. A particularly rare item is the Confederate carbine. This weapon, a Model 1863 Tarpley carbine, is one of the few extant.

When the Civil War broke out,

Racks of weapons at Springfield Armory Museum represent a virtual "Americana" of gun development.

It's not a gun to shoot around corners, but famed "Crooked Gun" struck by lightning during the Civil War that this young visitor holds.

the Confederates were forced to fight with what they had available including such guns as hunting and fowling pieces, squirrel guns and shotguns—all unsuited for military campaigns. The South's attempt to make a military weapon resulted in the rare carbine now in the Springfield Armory Museum. It was designed by J. H. Tarpley in 1863 and manufactured by "J. & P. Garrett & Co. of Greensboro, N. C. C. S."

The Confederate carbine is noted for its lack of finished manufacture, a good indication of just how hard pressed the Southerners were in the making of their military pieces. The carbine on display, for example, has a butt stock extending to the receiver only. The forehand stock has been eliminated. There are no sights nor was any provision made for a bayonet or stacking swivel.

A closer look at the Confederate carbine reveals that Southern gunmakers had no way of splining the opening for the breech block without drilling the receiver throughout its entire length. This gives credence to the statement that Southern gun manufacturing equipment reputedly was limited to a few old lathes and a file.

STILL another unusual weapon is the Philippine Moro Paliuntud shotgun. This weapon, a 13/16 gage Model 1923 home-made contraption, can easily be listed as a "suicide" piece since the chances were excellent that the person firing the piece could be easily killed by the weapon itself exploding.

In appearance the Paliuntud suggests a cross between a length of galvanized pipe, a shotgun and a

boy's air gun. It has a butt plate made of tin and fastened with carpet tacks. The barrel is pumped backward to loose a shot and is limited in its forward movement upon opening the chamber by sliding the barrel forward, either by a notch on a brass rod which acts as a guide, or by sliding the barrel forward the length of the sling.

At short range, the Paliuntud was effective when loaded with slugs—provided the weapon itself did not blow up.

The weapon's history is also intriguing. Records at the Museum indicate that General Pershing started to collect all firearms in the Philippines somewhere around 1910. By 1917, the Moros had very few firearms of any description. By 1923, the Moros of Sulu and Lanao were in revolt, losing quite a number of their following in action against the Philippine Constabulary.

The Moros became desperate and commanded the home manufacture of shotguns and pistols, using small gage water pipes for barrels. During four days of fighting at Tugaya, Lanao, in May 1926, the Moros killed and wounded 51 Constabulary soldiers with these home-made firearms. In 1925, an estimated five thousand of these weapons were in the hands of the rebels. Practically all were eventually seized by the Constabulary.

THE MUSEUM also exhibits countless other items which have been viewed by thousands of visitors. Already recorded for posterity by Henry Wadsworth Longfellow in his "Arsenal at Springfield" is the rifle organ composed of row upon row of stacked muskets. The Blanchard lathe, forerunner of the modern lathe and recognized as one of the wonders of the industrial revolution, is also on exhibit.

Individual items include a Japanese warlord's armor dating back to pre-Commodore Perry times; a bullet-pierced French *cuirasse;* Japanese lances and spears; swords of all periods; early Gatling machineguns; Moroccan-type rifles; special German and Austrian target rifles; French, English, German, Russian, Austrian, Polish, Arab, and Italian rifles and machineguns; and aircraft machineguns, including the brace of caliber .50 Brownings which shot down the last German plane destroyed in World War II.

The story of the Springfield Armory Museum is thus the story of America and its fighting men. It mirrors the saga of American greatness by chronicling, through its weapons, the Nation's growth to a position of military preeminence.

Aquatic Safety

With 54 military deaths in continental United States due to drowning in 1954—second largest class of accidental death in the services—commanders are urged in Department of the Army Circular 385–4 to review safety factors in such aquatic activities as swimming, boating and canoeing. These activities, the Circular points out, are excellent physical conditioners as well as being popular recreations, but in many instances, "personnel have not recognized the inherent dangers involved and, through ignorance or lack of proper precautions, have drowned or been seriously injured."

Skill for the kill

Tips on Hunting Safely

William L. Litsey

IN TIME OF WAR a self-inflicted wound usually is cause for a court-martial—but in time of peace many a SIW may be caused at this particular time of year by careless or thoughtless hunters.

It takes no crystal-gazing seer to predict that some servicemen who went through World War II or the Korean action will wind up this year as a hunting accident victim due to someone's carelessness.

As a rule, there are two contrasting types of soldier-huntsmen who are Happy While Hunting—the one who is totally ignorant, and the one who knows and follows the rules. However, some of the second type are so worried about what the first one may do that they aren't really happy at all.

In any case, the main idea is to know and follow the rules so as to be Happy *After* Hunting.

Ironically, many a serviceman who has had training in the care and handling of weapons can become a hunting victim by just a moment's relaxation—by himself or his companions—of the eternal care that is necessary while hunting.

ANALYSIS of hunting accidents shows that they usually fall under three main categories—improper care of the gun; improper handling of the gun; and improper use of the gun in the field.

Under the first heading, three excellent rules are—

1. *Be sure the gun is in good condition.* A backfiring bolt or improperly seated breech may take out an eye or slice off an ear.

2. *Use ammunition made for your gun.* The latest type magnum or super loads should not be used in the old "Damascus" type barrels.

3. *Be sure the gun muzzle is not plugged.* If you have been through mud, a plowed field, heavy brush and vines or snow, be sure to inspect the muzzle, keeping your finger off the trigger while you do.

AS FOR handling of the gun, three primary rules that will prevent injury or death to yourself and others are:

1. *Never load the gun until you reach the ground you are shooting over.* Unload it before you start back—and inspect the gun before you leave on the trip, after you leave the field, and before you clean your weapon.

2. *Always carry the piece in proper manner, even if unloaded.*

3. *Take especial care when climb-*

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ing through or over a fence. Never pull the gun after you by the barrel or prop it against a fence post while you climb over.

WHEN using the gun in the field, three excellent rules for preventing accidents are—

1. *Always know what you're shooting at.* That rustle in the brush may be a farmer's cow or horse—or even the farmer himself.

2. *Plan your shooting so that it will be away from habitations, personnel or domestic animals.*

3. *Use but don't depend on the safety catch alone.* Of course you'll keep the safety on except when actually making a shot—but don't depend on it alone. It may go wrong or break.

In hunting, as in driving an automobile or even just walking along a sidewalk, there is one all-important rule that, if universally observed, would practically eliminate accidents. And that is COURTESY.

If you would slam a door in the face of someone following you, you're probably the type of person who will let go a branch of a thorn tree so that it clips the next man in line in the face.

GOOD HUNTING can be found on many military reservations. But for the soldier planning a trip to a distant point where he may be in the woods for several days, here are some points which involve your well being, your enjoyment, possibly even your life:

1. In strange country it pays to get expert guidance.

2. Before you start out, whether with companions, a guide, or alone, check the following points:

Tell somebody where you will be and when you expect to be back.
Be sure you have matches in a waterproof container.
Try to carry water rather than purification pills but if on an extended trip, do take purification pills.
Be sure your clothing is suitable for any weather you may encounter.
Be sure your footgear is comfortable.
And carry a compass.

3. Watch where you're walking. Snake bites can be as dangerous as a shotgun or rifle wound.

4. Getting lost on a hunting trip is like getting captured during war—the first rule is to avoid it altogether. But if lost, you have three choices—stay put; move to a more suitable place; or keep moving. There are good reasons for each.

As long as you can be comfortable, why move? If you are near water, wood and good shelter, it may be the best idea to stay put and wait for help. If your location is not good, it may pay to move on until you find one that is.

But if you feel you must keep moving, try to locate a creek or stream and go downstream. Chances are you'll encounter some sort of habitation along a stream. It's a good idea also to blaze a clear trail so that searchers may find where you have been and know where you're going.

The best suggestion of all when lost, of course, is not to get panicky. If you have ammunition, fire three shots in quick succession as the danger or lost signal. Fire every half hour during daylight, and at once if you hear answering shots.

By doing your planning and worrying *before* you leave, you increase your chances of being Happy While Hunting. What's more, you'll be Alive After Hunting as well.

PARAGRAPHS

from

The Pentagon and the Field

The Infantry School, Fort Benning, Georgia, is now conducting a Pathfinder Course. Scheduled to run four times a year with an enrollment of 50 students in each class, the course qualifies individuals as members of Pathfinder Teams. These teams assist mass flights of fixed and rotary winged aircraft in assault landings. They also aid commanders in the assembly of troops upon landing and in directing aerial resupply operations.

A special film entitled "Concept for Victory" is being distributed throughout the Army, depicting an official message from the Chief of Staff on importance of ground forces in the light of current world conditions. The film will be included in the troop information program.

In standby status since June 1954, Camp Polk, Louisiana, is expected to be reopened to provide a large-scale maneuver area on a continuing basis. Under present plans being worked out by Department of Army and the State of Louisiana, about 100,000 troops will be phased into the area in connection with forthcoming large scale fall maneuvers. Some 7,000,000 acres, of which 600,000 now are Government-owned, is involved.

Each fatal injury to military personnel costs $21,300 according to a recent study, results of which are set forth in Department of the Army Circular 385–2. Costs cover dependents' survivor benefits, death gratuity pay, shipping and burial of remains, and Government insurance.

Nonfatal disabling injuries cost an average of $1,050, the study showed. This covers Army and Veterans Administration disability payments, hospitalization and other medical care, and pay and allowance of personnel while hospitalized. An average of 30 days is lost in such cases.

Costs of civilian personnel fatal injuries is estimated at $29,030, and nonfatal disabling injuries at $432. The difference between military and civilian nonfatal costs is attributed to the fact that the Army must provide convalescence facilities for its members.

"Military police should regard disciplinary barracks and guardhouses as being similar to hospitals. When Army medical personnel get patients in the hospital, they work hard to rehabilitate them so that they can go back as healthy soldiers. Military police efforts should be directed toward getting confinees back as honorable soldiers and, when that can't be done, at least turn them back as better citizens," Maj. Gen. W. H. Maglin, The Provost Marshal General, stated recently at Camp Gordon, Georgia.

To assist in this effort, a confinement supervision course is being established at the Military Police School to train noncommissioned officers in the supervision of military personnel assigned to confinement duties. This will lead to a 952.6 Military Occupational Specialty (Confinement Specialist).

Redistribution of grades among Reserve warrant officers of the Army, in accordance with Warrant Officer Act of 1954 and section 223, Armed Forces Reserve Act of 1952, will be made on 1 September 1955. Department of the Army Circular 135–7 details the procedures to be followed.

Service-test models of an underground cable layer are undergoing tests at the Signal Corps Engineering Laboratories. This lightweight facility can be drawn by a ¾-ton or larger vehicle while it installs tactical communication wires and cables underground.

Additional copies of Pamphlet 21–64, which provides current guidance in public information, are being procured so that commanders may requisition sufficient copies to supply one for each 10 officers. According to Department of the Army Circular 360–1, the public relations problem facing the Army today requires that all officers be familiar with concepts and methods of operation in the field of public information. It is urged that all officers read Pamphlet 21–64 and that thereafter all officers through the grade of colonel read it once during each grade period.

"The Quartermaster Corps: Organization, Supply and Services," second of four volumes dealing with the World War II history of the Army Quartermaster Corps, is the latest work to be issued by the Office of the Chief of Military History in the series entitled "The United States Army in World War II." The new volume may be purchased for $4 from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Official Notes

SUPPLY MANAGEMENT COURSE. AR 350–40 describes in detail the Army Supply Management Course at Fort Lee, Virginia, which was established to teach an integrated supply management course, based on sound business principles, to personnel in key managerial positions in the Army supply system. Three twelve-week courses will be conducted during fiscal year 1956 beginning 26 September 1955, 3 January and 2 April 1956.

NIKE INFORMATION RELEASE. AR 360–28 summarizes public information guidance on the Nike guided missile program.

MUSTERING-OUT PAYMENTS. AR 35–1340 covers details of administering Army payments under the Mustering-Out Payment Act of 1944 and the Veterans' Readjustment Assistance Act of 1952.

INCENTIVE DUTY PAY. AR 35–126 prescribes qualifications for and payment of incentive pay for demolition duty.

RETIRED PAY TABLES. AR 35–1311 details in table form monthly rates of pay for retired commissioned officers, warrant officers and enlisted personnel. It also contains instructions for use of formulas used in computing such pay.

NATURALIZATION. Final date for filing petitions for naturalization under the act of 30 June 1953 (Public Law 86—83d Congress) has been established as 31 December 1955. SR 600–770–1 provides for expediting the naturalization of aliens who serve or who have served in the Armed Forces at least 90 days during the period 24 June 1950 to 1 July 1955.

SPECIALISTS MOVEMENT. Department of the Army Circular 612–5 provides for accelerated movement of enlisted personnel with costly technical MOS's involving long periods of training. The program provides for maximum utilization of air travel to oversea commands.

DEPENDENT TRAVEL. Department of the Army Circular 55–8 contains information applicable to dependent travel to Alaska, France and Hawaii.

CONCURRENT TRAVEL. AR 55–47 prescribes policies and establishes procedures for concurrent travel to various oversea areas. The regulation applies both to travel performed simultaneously by the principal and dependents, and to travel of dependents under approval of the oversea commander within 60 days after the principal's reporting date.

ARMY ATTACHES. Department of the Army Circular 611–4 lists tentative dates to start training for vacancies that will occur in the Army Attache System. The dates range from August 1955 through May 1957. Applications, to be made in accordance with SR 600–147–1, normally should be submitted 12 months prior to the date training is scheduled to begin for the earliest vacancy for which the applicant desires to be considered. Officers on active duty in the grade of captain and above may apply. Vacancies are listed for Army Attache, Assistant Army Attache, and Assistant Army Liaison Officer in countries all over the world.

COMPENSATION RATE TABLES. AR 35–247 governs the pricing of military personal services in arriving at the cost of work performed by military personnel in Army activities (industrial and nonindustrial) and prescribes the rates to be used where the inclusion of military pay is authorized.

DUTIES OF CHAPLAINS. AR 165–15 prescribes the duties of chaplains in the Army, defines the responsibilities of commanders for religious activities, and governs preparation of chaplains' reports.

PERSONAL PROPERTY. AR 643–40 covers the handling of lost, abandoned or unclaimed private property coming into possession of the Army.

RESERVE TRANSFERS. AR 140–160 prescribes general procedures and standards relating to transfer between categories of the Army Reserve, transfer between branches of the Service, details of commissioned members of the Army Reserve, transfer between reserve components of the Armed Forces, criteria for retention in or removal from an active status in the Army Reserve, and transfer between reserve components of the Army.

TRAILER ALLOWANCE. AR 35–3055 prescribes procedures relative to payment of trailer allowance in connection with permanent change of station. Entitlement to payment for such travel is set forth in chapter 10, Joint Travel Regulations.

AUDITING. AR 36–5 prescribes the authority, responsibilities, organization, and general policies affecting auditing within the Army Establishment, as well as basic methods of carrying out the internal audit responsibilities of the Chief, Army Audit Agency and related responsibilities of all commanders.

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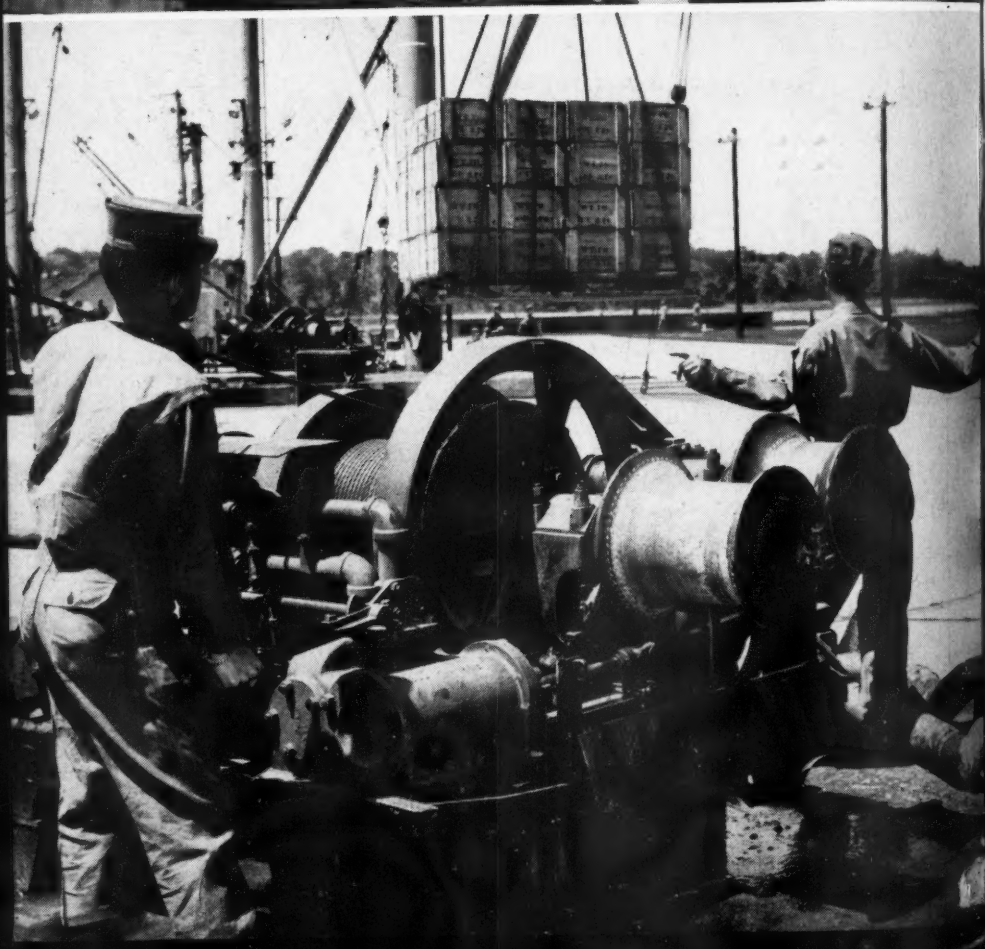
"Landship" for Army Stevedores Trains Transportation Troops

A LANDLOCKED ship that never sails any place although it is equipped with latest cargo handling facilities, now is being loaded, unloaded and reloaded by successive classes of Transportation Corps troops at Fort Eustis, Virginia.

The "landship" is an all-steel mockup, 312 feet long, of a full-size seagoing freighter, complete except for bow and stern sections. This new, permanent training aid, capable of training 272 troops in military port operations in each class, replaces an obsolete World War II wooden mockup which could handle only 34 trainees at a time. The land-bound vessel simulates the Liberty, Victory and Mariner-type ships.

As the final part of a three-phase training program, instruction is offered in steam and electrical winch operation and in loading and discharging problems peculiar to port operation.

Following training in handling cargo with the 5-ton, 10-ton, and 60-ton boom, students learn actual operating conditions on the "landship." Working out of two nearby warehouses, the students practice how to segregate, palletize, check and stack cargo in the four holds which are designed to accommodate ammunition, fuel, heavy cargo or general cargo.

BACK COVER shows the Fort Eustis mockup, which duplicates the rigging, hatches, and holds of a seagoing transport. In the bottom view, budding stevedores going through the winch "farm" phase of training learn the precise use of hand signals to guide the winch operator in handling simulated cargo.